CLAIMS

1. Device for mixing fluids comprising a chamber (C) in which are present the fluids to be mixed (L1, L2), characterised in that it comprises means (ai, Ei) for displacing, around a central point, under the action of a force, the particles present in said chamber (C), the trajectory of said particles having radial fluctuations in relation to the central point.

2. Device according to claim 1, characterised in that the particles are paramagnetic beads (b) and in that the means for displacing said particles comprise means for establishing a magnetic field rotating around the central point.

3. Device according to claim 2, characterised in that the means for establishing a magnetic field rotating around the central point comprise permanent magnets (A1, A2) rotating around the central point and a ferromagnetic core (Nm) placed at the level of the central point.

4. Device according to claim 2, characterised in that the means for establishing a magnetic field rotating around the central point comprise electro-magnets (ai) and a ferromagnetic core (Nm) placed at the level of the central point.

5. Device according to claim 1, characterised in that the particles are molecules (p) of at least one of the fluids to be mixed and in that the means for displacing the particles comprise means for establishing a dielectrophoretic field rotating around the central point.

6. Device according to claim 5, characterised in that the means for establishing a dielectrophoretic field rotating around the central point comprise a dielectric core (Nd) placed at the level of the central point, the dielectric constant (ϵ_c) of the dielectric core having a value greater that the dielectric constant of the fluids to be mixed, and electrode pairs (Ei) on the periphery of the chamber, the two electrodes of a pair being situated opposite each other, on either side of the chamber (C), said electrode pairs being supplied alternately, in rotating around the dielectric core, by an alternating current.

7. Device according to claim 6, characterised in that the electrodes (E1) are electrically isolated from the fluids to be mixed in order to avoid a local ionisation of said fluids.

8. Device according to claim 6 or 7, characterised in that the frequency of the alternating current supplying the electrodes (Ei) is between 1 kHz and 100 kHz.